

AUTHOR Mishonov, M. (Sofia)

TITLE: On the shell border effect according to non-linear theory

PERIODICAL Inzhenernyy zhurnal, v. 2, no. 1, 1962, 87-97

TEXT: The border effect is analysed on the basis of the non-linear differential relationships of the theory of sloping shells, their use being correct due to the local character of the border effect. Two particular cases are examined; sloping shells on a rectangular plane, and revolution shells in the case of axially-symmetric loading and support. The differential equations obtained in the two cases have the same structure and can be represented in the general form

 $\frac{d^4w}{d\rho^4} + 4N \frac{d^2w}{d\rho^2} + 4w = 4 (A + B\rho)$

 $N = \alpha + \beta \rho$

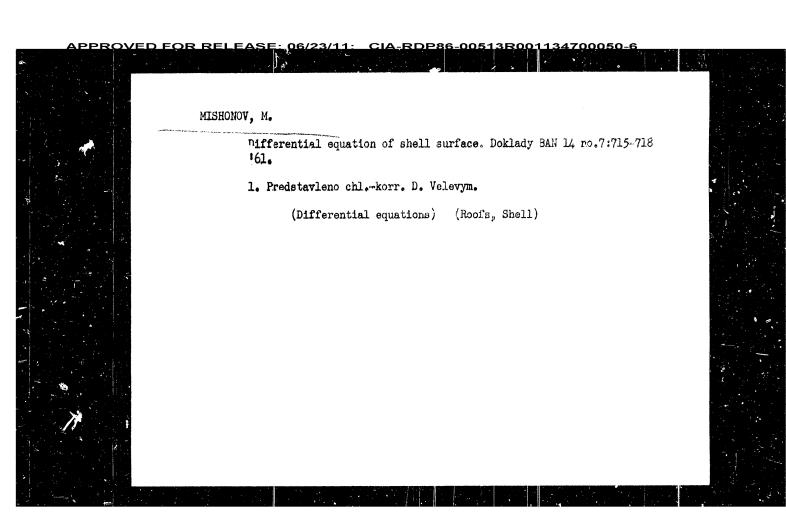
Here A, B, α , β are constants, $\rho = a$ non-dimensional magnitude, w = displacement in the direction of the z axis. Equation (2.1) has, for given boundary conditions, a unique solution; therefore, the stability of the

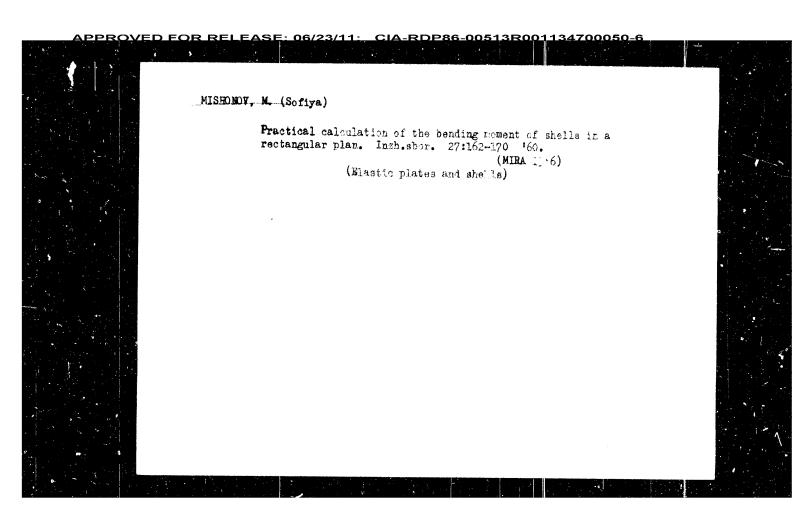
(2.1)

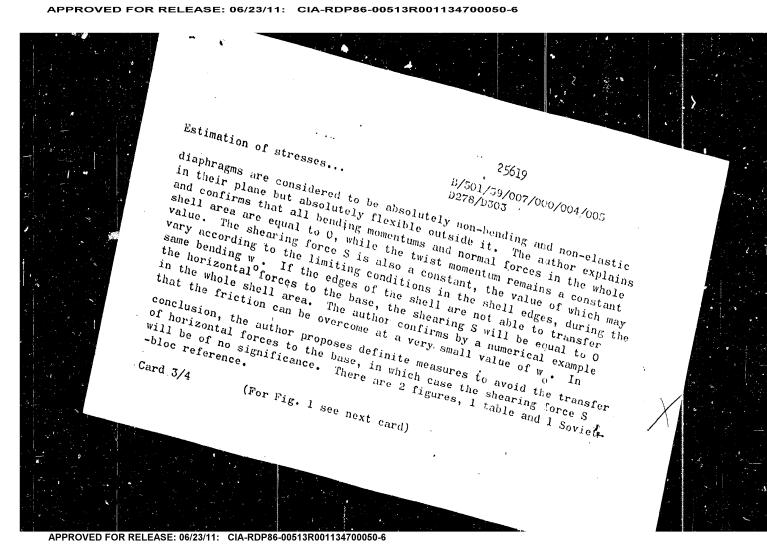
(2.2)

where

Card 1/2







25619 B/501/59/007/000/004/005 D278/D303 Estimation of stresses... of the stress conditions in a shell liable to deformation, the author uses the differential equations given by V.Z. Vlasov (Ref. 1, V.Z. Vlasov: Nekotoryye zadachi soprotivleniya materialov, stroitel noy mekhanika i teorii uprugosti, Akademiya nauk SSSR, Otdelenie tekhnicheskih mauk, no. 9, 1950) in which the displacements u, w and v are used as reference unknowns, assuming that the O point of the coordinate system lies on one of the shell edges. The accepted coordinate system is shown in Fig. 1, where the coordinate axis x and y determine the base which satisfies w ab xy of the flat shell. The arrangement all boundary conditions and where \mathbf{w}_0 is the curvature of one of the shell edges, and a,b the side lengths of the rectangular base is taken for the displacement w. For the displacements u,v, simple algebraic expressions containing the constants of integration are obtained by integration. The constants should be determined, considering the boundary conditions on the shell edges. The permanent and the temporary edge girders 1.e. Card 2/4

2563.9 B/501/59/007/000/004/005 D278/D303

24,4200

AUTHOR:

Mishonov, Mikhail, Engineer

TITLE

Estimation of stresses occurring during deformation of flat shells with double curvature above a rectangular base

PERIODICAL:

Bulgarska akademiya na naukite. Izvestiya. Tekhnicheski institut. Otdelenie za fiziko-matematicheski i tekhnich-

eski nauki, v. 7-8, 1959, 83-91

TEXT: The article deals with a theoretical estimation of stresses occurring during deformation of flat shells with double curvature above a rectangular base. Spherical and cylindrical shells are considered a special case. In conducting this study, the author considers the whole shell structure as supported only at the four edges. The deformation of the shell is caused by one edge laying outside the plane defined by the other three edges. The additional loads occurring in such a case may cause cracks especially in reinforced concrete shell structures. To obtain simple closed formulas which may be used for a quick examination

Card 1/4

25617 B/501/59/007/000/002/005 D278/D303 On the theory ... where XY,Z are components of the surface load distribution, and k_x , k_y , k_{xy} , the variable curves. In case of shells with a constant tangential load, the author derives simple formulas and arrives at the which reduces the in- $\Delta \Delta \varphi_1 + Eh \Delta_k w_1 = 0$ system (31)vestigation to studying $D\Lambda\Lambda w_1-\Lambda_k\varphi_1=k_{xy}(b-2y)X_0.$ the structure under a fictious normal load Z=k (b-2y)X only. For examining double-curved shells with an arbitrary load, the author proposes certain formulas, the application of which requires the loads expressed in a form of double trigonometrical series. There are 1 figure and 4 Soviet-bloc references. SUBMITTED: October 12, 1957 Card 4/4

2561. B/501/59/007/000/002/005 D278/D303 On the theory. The conversion
(13) $D\Delta \Delta W^{\frac{4}{7}} + \frac{Eh}{R^2} \cdot W^{\frac{2}{7}} = Z$ (14) $\Delta w = \Delta W^*$ $Aq = -\frac{Eh}{R} \cdot W^*.$ obtained by substituting formulas (13) in the second formula of the system (1); as well as Eq. (13) will be correct in case of spherical shells and will not lead to inaccurate results. Where not only normal, but also tangential loads act upon the shell surface, the author states that the system of three differential equations, as given by V.Z. Vlasov, might be used but is very complicated and, therefore, in many cases very inconvenient. He attempted to determine a generalization of the system (1) which will be valid at any arbitrary load. The author mentions that such a generalization for circular-cylindrical shells has already been given by D. Rüdiger and J. Urban (Ref. 4: D. Rüdiger, J. Urban: Kreiszilinderschalen, B.G. Teubner, Verlagsgesellschaft, Leipzig, 1955). The author arrived at the following system permitting the examination of flat shells with an $\int_{-1.1\varphi + Eh \cdot 1_{R}w}^{Q^{2}X} - \int_{-Q^{2}y^{2}}^{Q^{2}X} \cdot dx + \int_{-Q^{2}x^{2}}^{Q^{2}Y} \cdot dy - r\left(\frac{\partial X}{\partial x} + \frac{\partial Y}{\partial y}\right)$ arbitrary load $DAAw = A_{k} \psi = Z - k_{x} \int X dx - k_{y} \int Y d_{y}.$ Card 3/4

B/501/59/007/000/002/005 D278/D303

On the theory ...

where Z is surface load, h, thickness of the shell, E, modulus of linear deformation, X and Y equal to 0, and $D = \frac{Eh^3}{1071 - 27}$, v, Poisson's ratio,

and where the operators $\Delta_1 \Delta_K$ have the following meaning with k_X and k_y as curves of bending, and

$$A = \frac{\partial^2}{\partial x^2} + \frac{\partial^2}{\partial y^2};$$

$$A_{h} = k_{x} \cdot \frac{\partial^{2}}{\partial y^{2}} + k_{y} \cdot \frac{\partial^{2}}{\partial x^{2}} - 2k_{xy} \cdot \frac{\partial^{2}}{\partial x \partial y}.$$

 $\mathbf{k}_{\mathbf{x}\mathbf{y}}$ as curve of bending of the shell surface, are usually used in examining flat shells. The author points out that the following conversion of the above system,

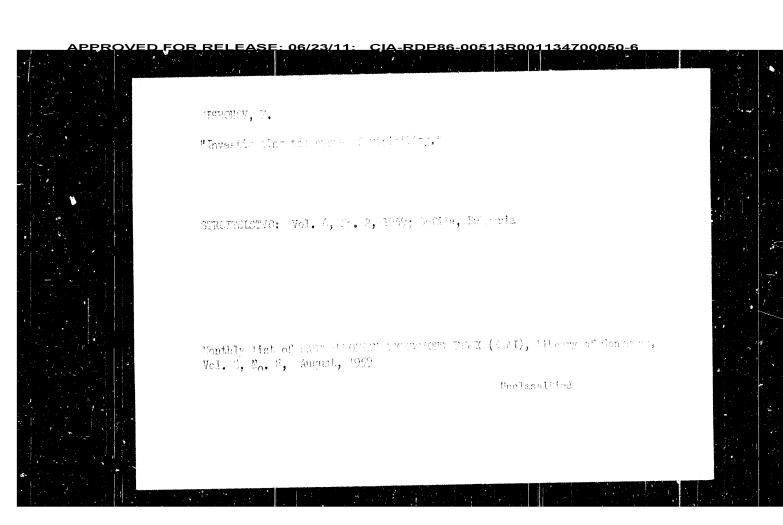
made by V.Z. Vlasov by introducing a new scalar function W will not be correct for spherical shells and that this conversion (7) $D\Delta dA\Delta W + Eh\Delta_R\Delta_R W = Z.$ may lead to inaccurate results.

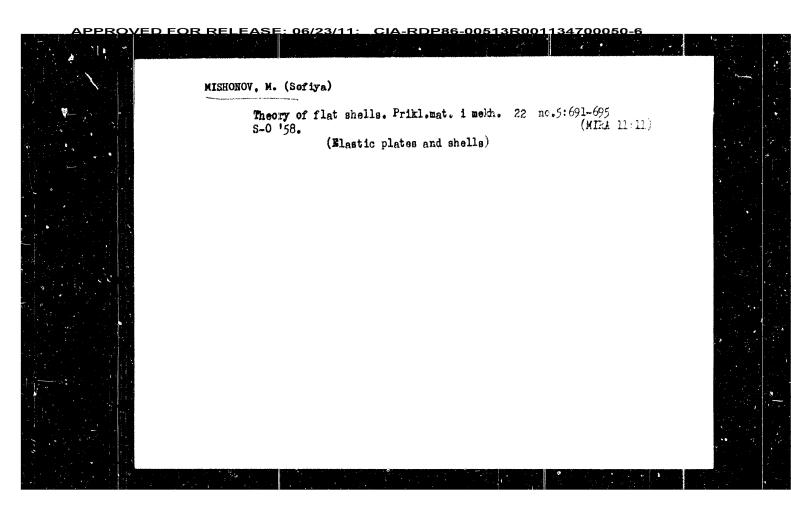
The author proposes a new conversion of the above system by introducing

a new scalar function W which may be defined by the formulas (see next card)

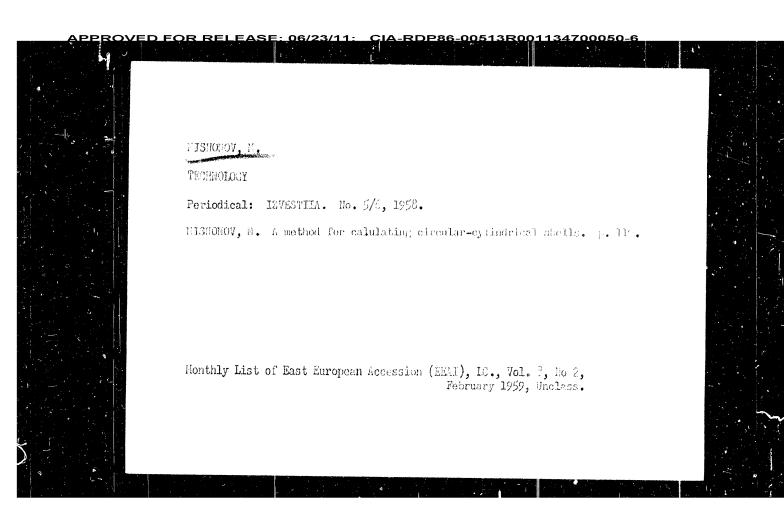
Card 2/4

25617 B/501/59/007/000/002/005 1327 24 4200 D278/D303 AUTHOR: Mishonov, Mikhail, Engineer TITLE: On the theory of flat shells PERIODICAL: Bulgarska akademiya na naukite. Izvestiya, Tekhnicheski institut. Otdelenie za fiziko-matematicheski i tekhnicheski nauki, v. 7-8, 1959, 23-32 TEXT: The author explains that the basic differential equations of the technological theory of flat shells as given by V.Z. Vlasov (Ref. 1: V.Z. Vlasov: Obshchaya teoriya obolochek, Gosudarstvenoe izdatel'stvo teknhik-teoreticheskoy literatury, 1949) and (Ref. 2: V.Z. Vlasov: Nekotoryye zadachi soprotivlenia materialov, stroitel'noy mekhaniki i teorii uprugosti, Akademiya nauk SSSR, Izvestiya. Otdelenie tekhniches-kih nauk, no. 9, 1950) and expressed, if the normal bending w and the stress function are taken as reference unknowns, by the system (1) $\begin{array}{l}
AA_{q} + EhA_{h}w = 0 \\
DAAw - A_{k}q = Z.
\end{array}$ (1) Card 1/4





MISHOROV, M. TECHNOLOGY Periodical STRUITMENTYO. Vol. 5, no. 4, 1958. MISHOROV, M. Contribution to the practical calculation of the tending moments of shells over rectangular foundations. p. 14. Konthly List of East European Accessions (SEAI) 15, Vol. 8, no. 3, March, 1959. Heal.

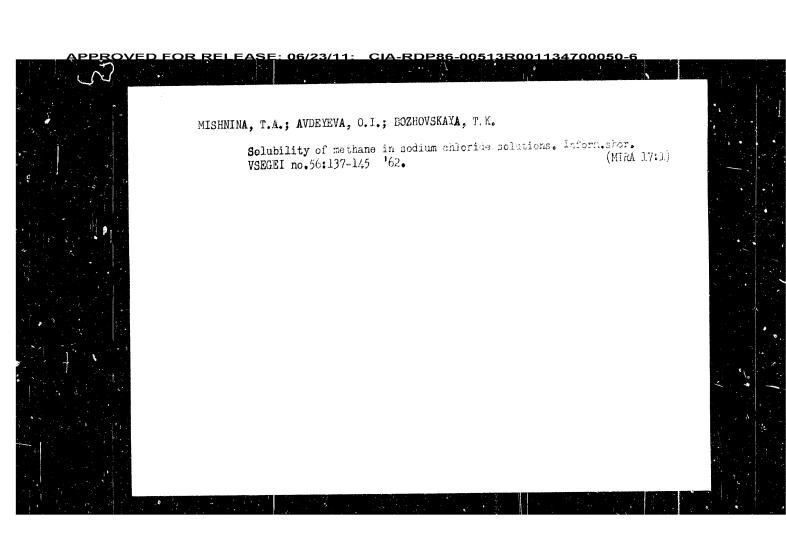


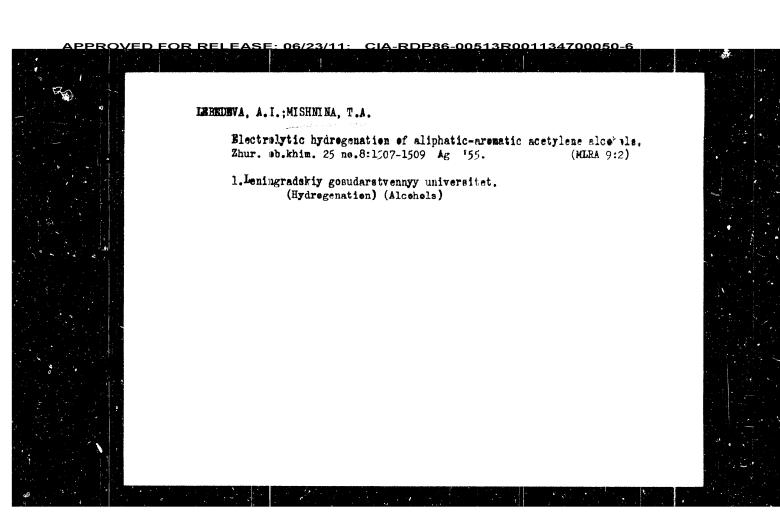
MISHONOV, M.

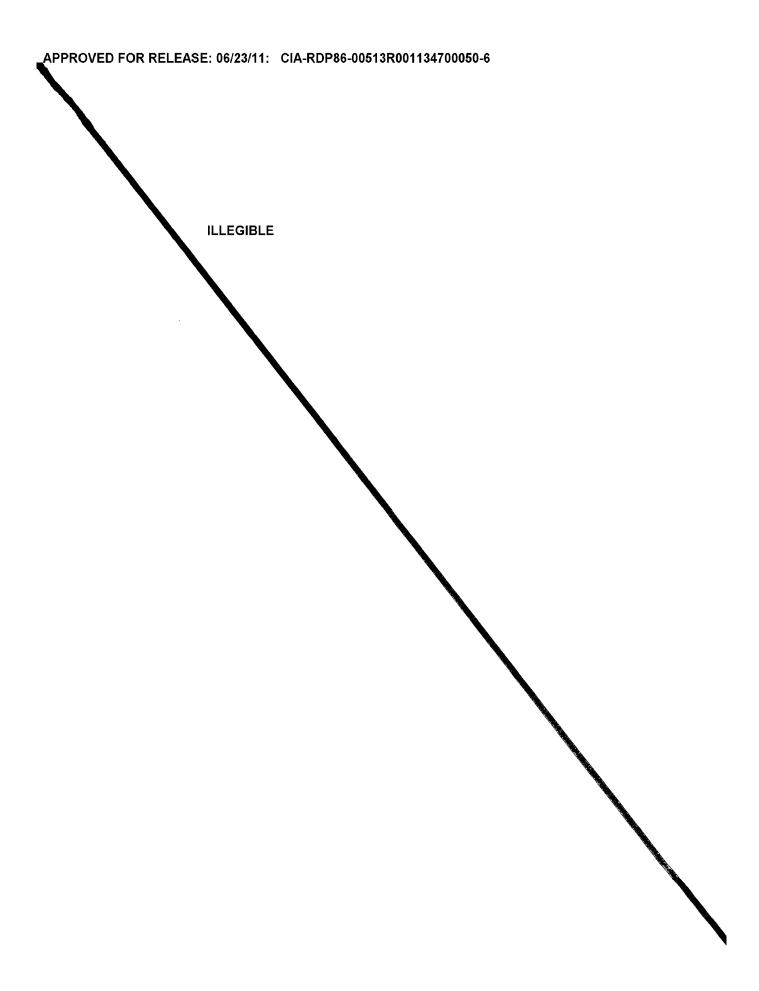
Contribution to the theory of rectangular elastic plates. p. 3.

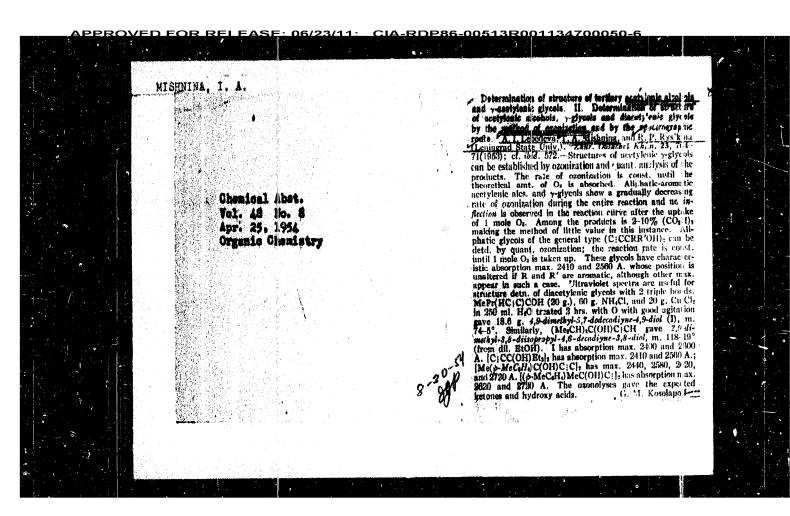
(Izvestiia, Vol. h, 1956, Bulgaria)

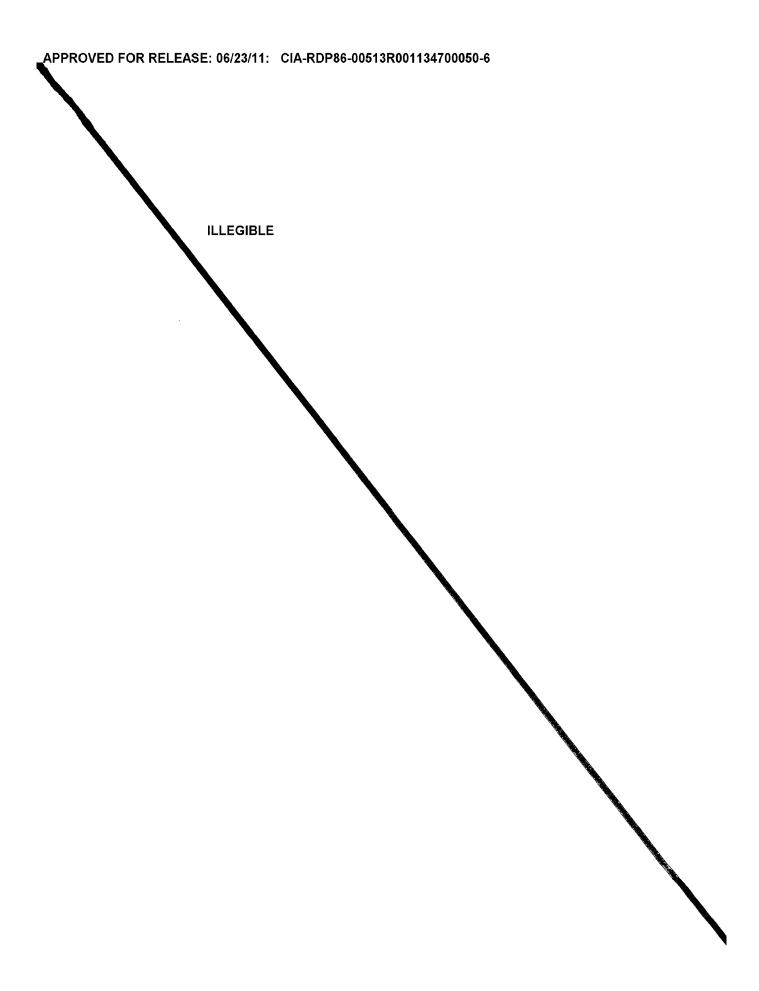
So: Monthly List of East European Accessions (EEAL) LC, Vol. 6, no. 6, June 1957, Uncl.

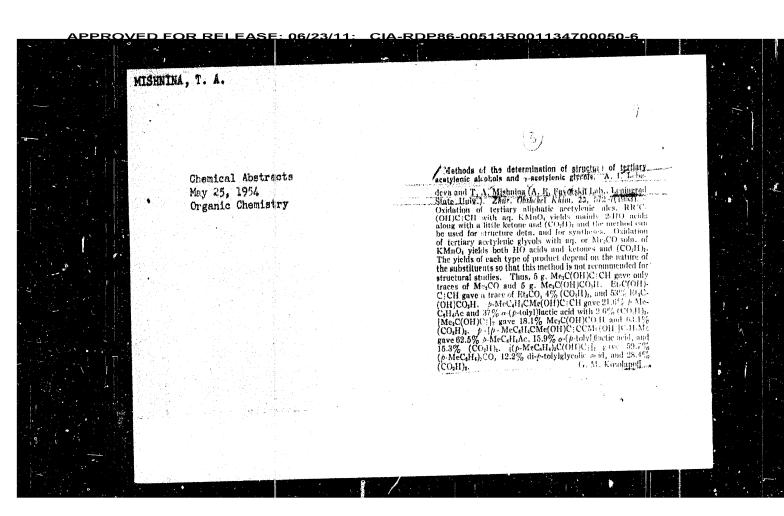


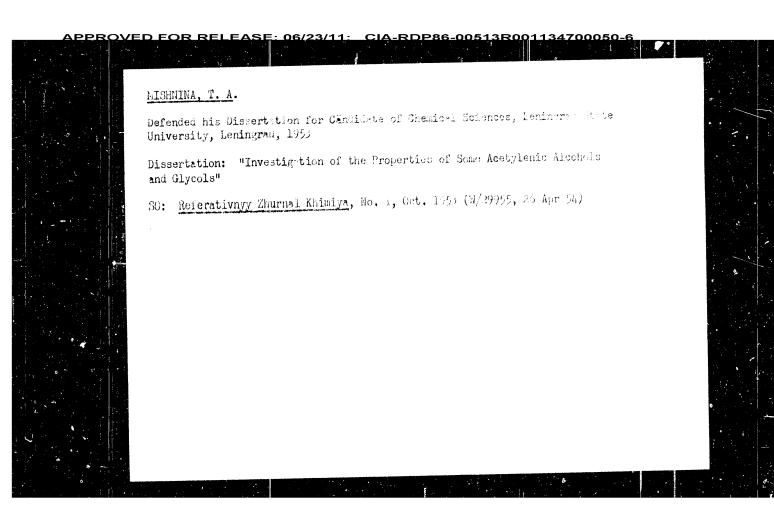


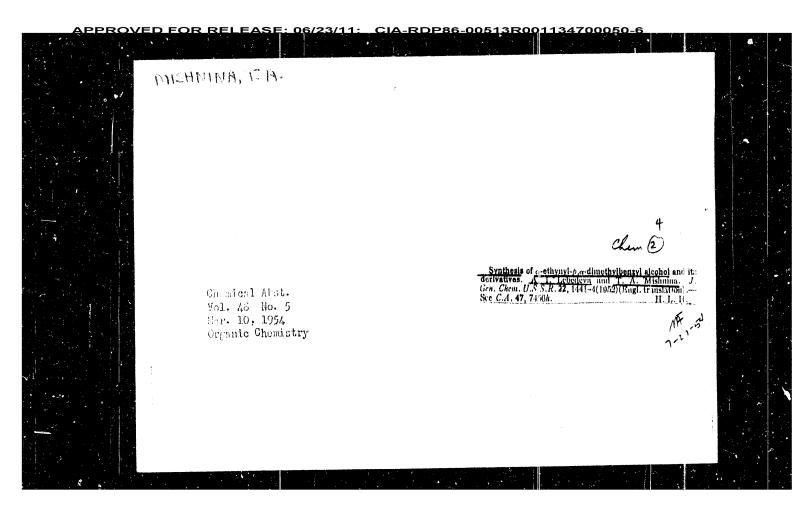


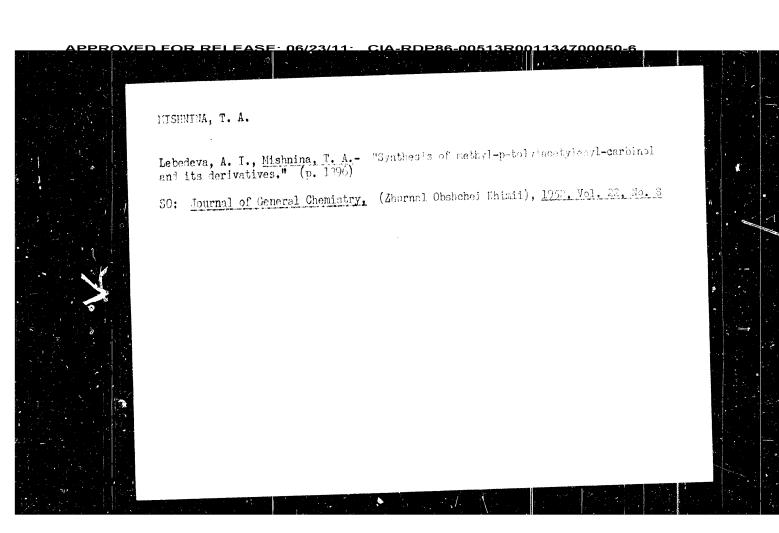


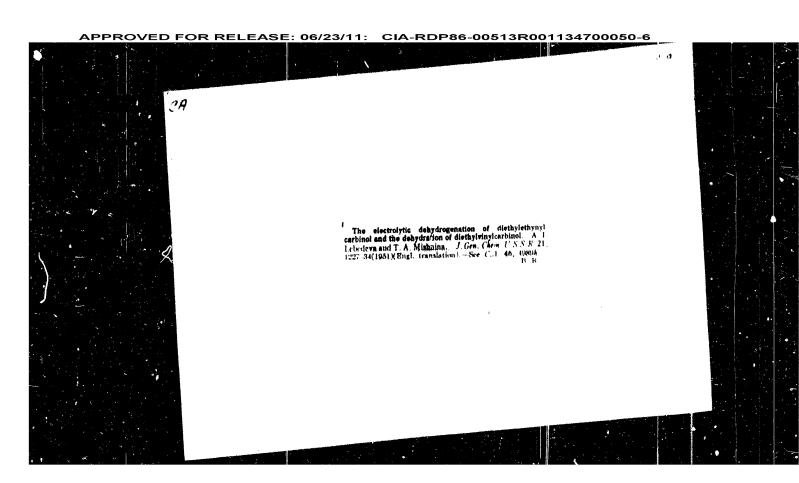










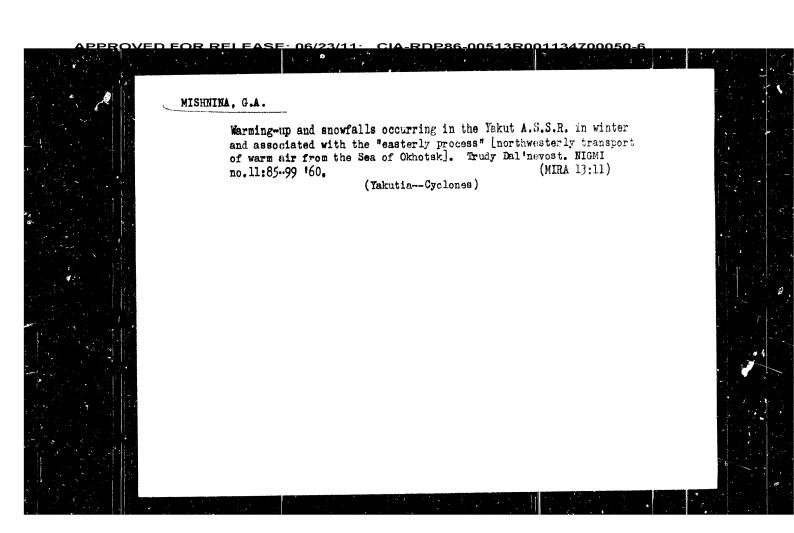


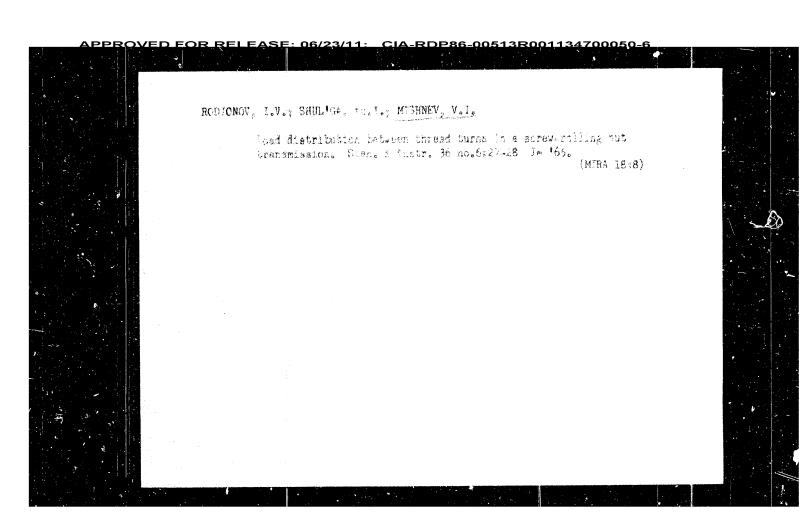
USSEN/Chemistry - Acetylenic Compounds Jun 51

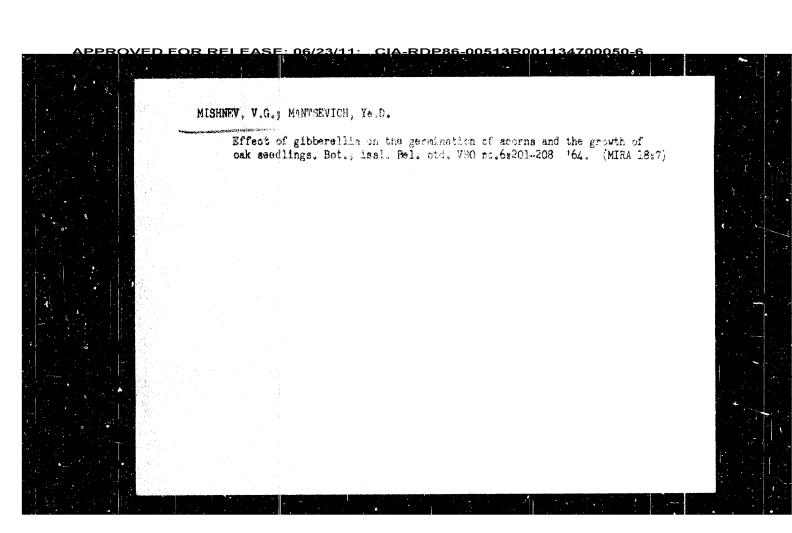
"Electrolytic Hydrogenstian of Diethyl Acetylenyl
Carbinol and Delyturation of Diethyl Vinyl CarHistol," A. I. Lebeders, T. A. Michania, Chair of
Structure of Org Compds, Leningrad State U immal
Electrolytic Compds, Junior of Diethyl Vinyl Car"Entablished optimum conditions for electrolytic
Established optimum conditions for electrolytic
Organization carbinol with Ag-plated Cu cathode
diethyl Vinyl carbinol with Ag-plated Cu cathode
diethyl Vinyl carbinol was characterized. Hydrocarbon obtained in dehydration of the latter,
Contablished Liss adm product with maleic anhydride.

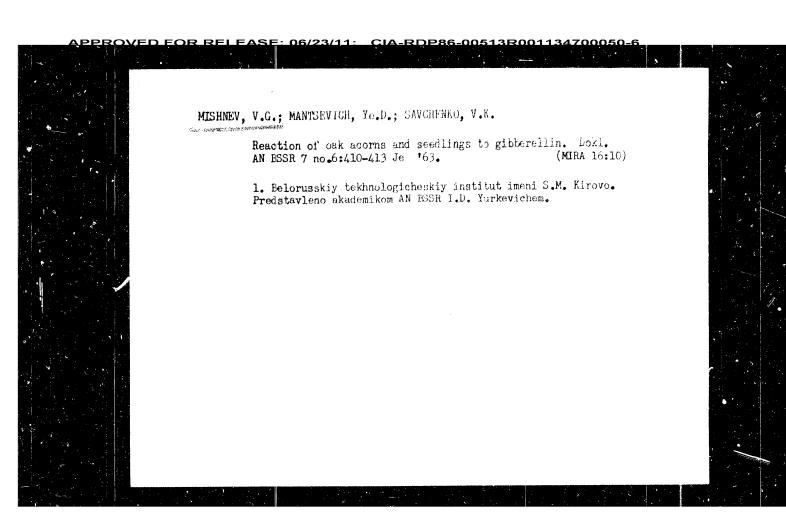
Jethyl pentametiene -1, Sheretogree unknown,
Sachatecthized, man its dimer isolated. Obvas Contacterizing, man its dimer isolated.
Obtained hereofore unknown diages

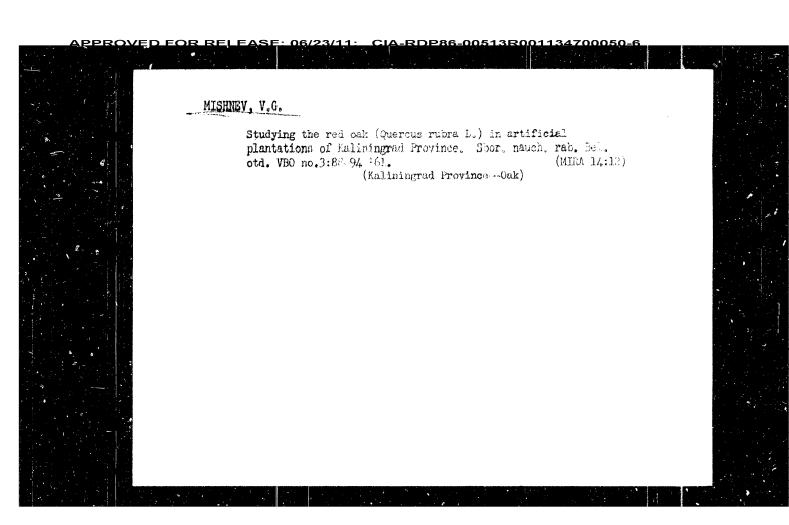
5.8-diethyldecalyme-4,G-diol-3,8.

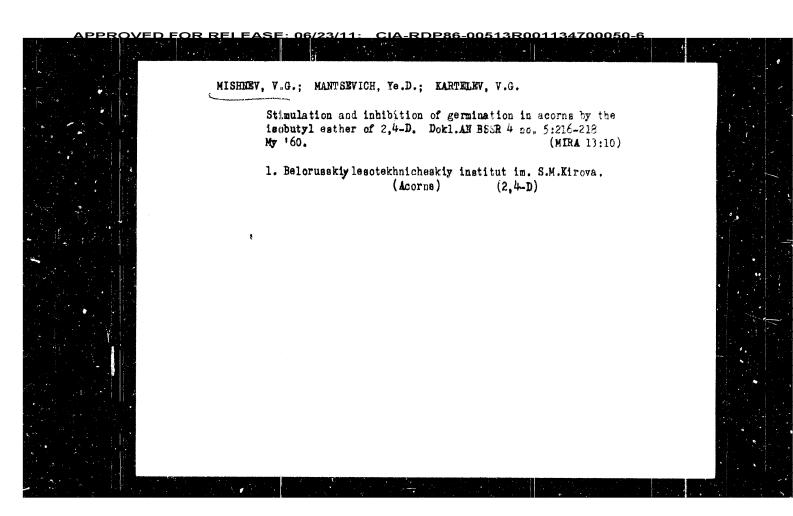


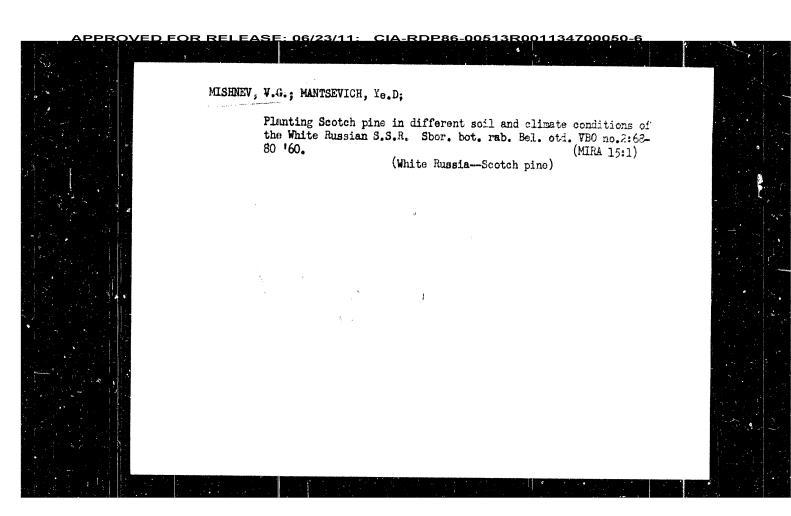


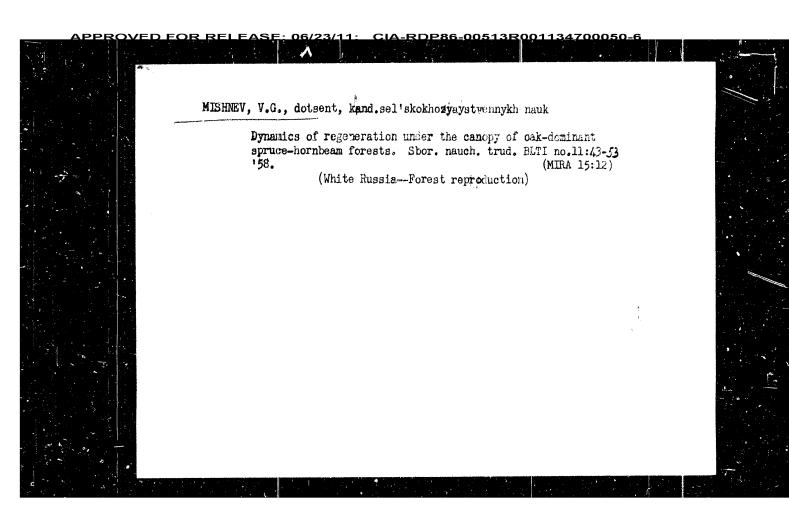


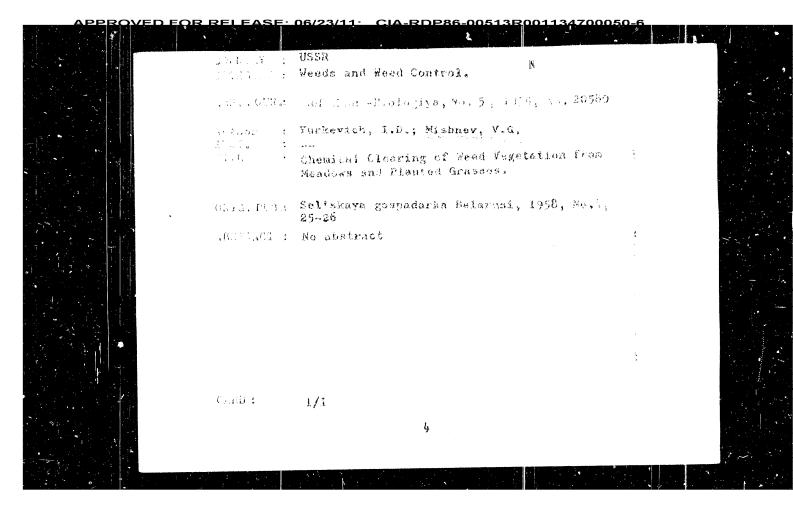












MISHNEV, V.G. USSR / Forestry. Forest Biology and Typology K-2

Abs Jour: Ref Zhur-Biol., No 10, 1958, 43911

Author: Mishnev, V. G., Romanov, V. S.

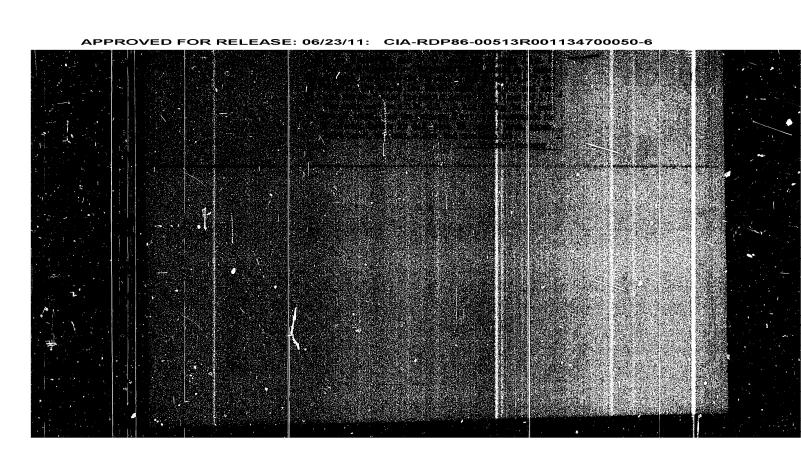
Inst: AS Belorussion SSR

Title: On the Relationships Between the Young Growth and the Mother Trees Stand in Forest Flantings

Orig Pub: Izv. AN BSSR. Ser. biol. n., 1957, No 2, 39-45

Abstract: This study covered the effect of mother trees on the distribution of their offspring on the area under their cover. The study was conducted in Delorussia in 100 to 200-year old gout weed-spruce-horn-beam woods and in the 70-year old pine-birch plantings amid bristly fox-tail grass and green moss.

Card 1/2



APPROVED FOR RELEASE: 06/23/11: CIA-RDP86-00513R001134700050-6

USSR/Forestry - Forest Biology and Typology.

Abs Jour : Ref Zhur - Biol., No 4, 1958, 15349

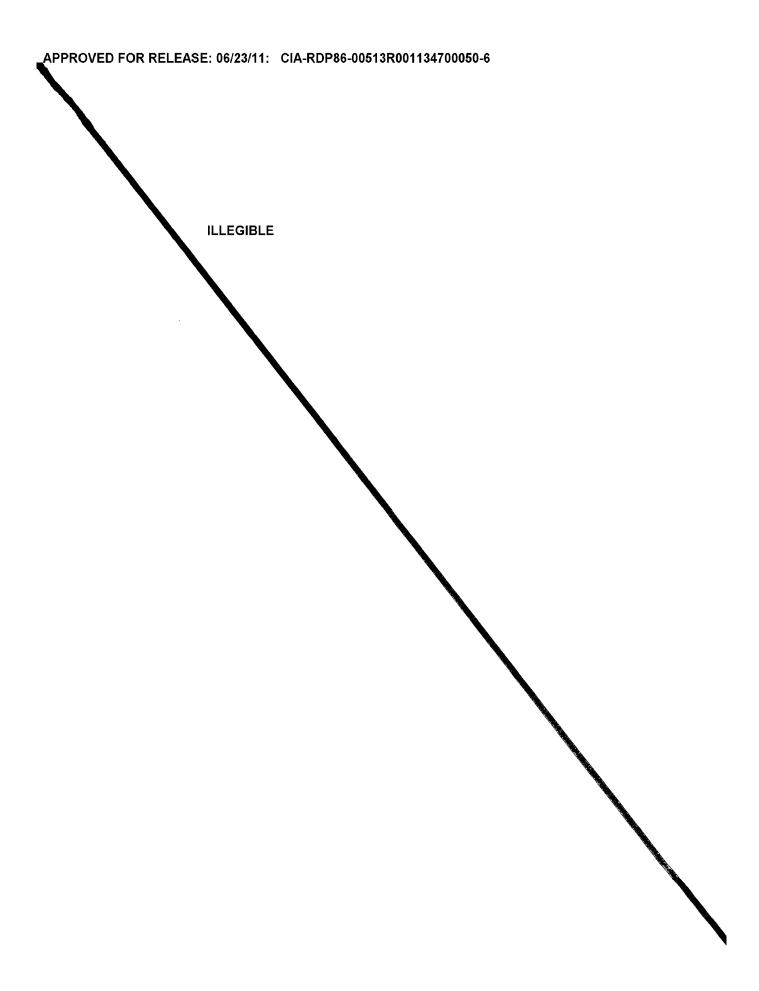
the Bielorussian SSR. It was established that the oak tree in this type, in the majority of cases, renews unsatisfactority; its yield tends to be comparatively rare (averaging about 4-5 years), the self-seeding trees die off before the advent of the following productive year. Consequently, leafy undergrowth of little value springs up in the oak wood clearings. Among those species associated with oak, the maple and hornbeam renew best; the ash, linden and English elm have been successfully renewed, although their participation in the makeup of the groves is ordinarily quite insignificant. The spruce has been less successful in renewal, despite the fact that it has an undergrowth adequate to insure its desired participation in the composition of the new forest population. The birch and aspen renew rather poorly under the forest canopy. Among the complex of factors affecting the nature of renewal in all species,

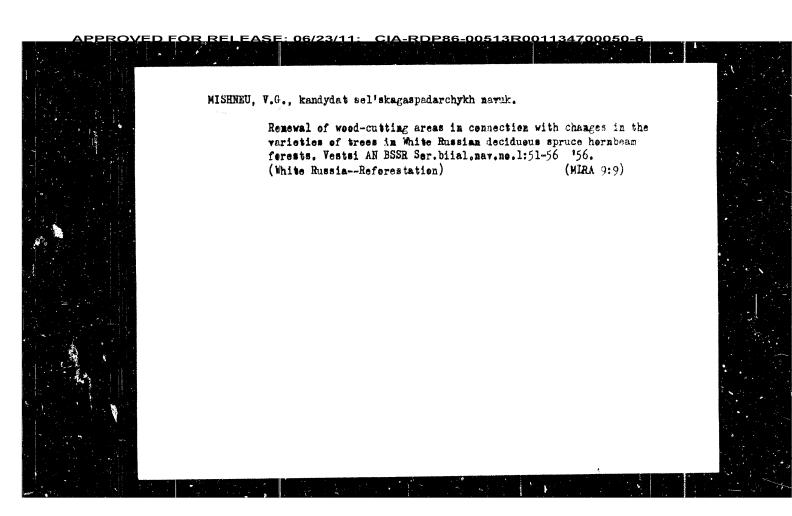
к.

Card 2/3

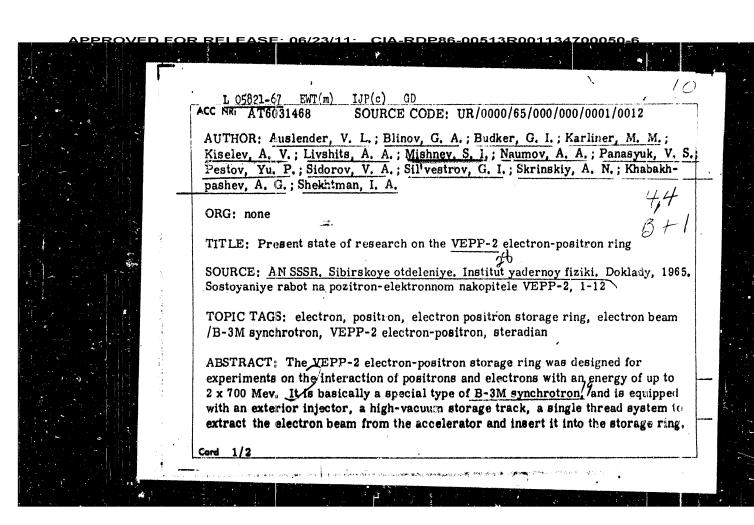
10

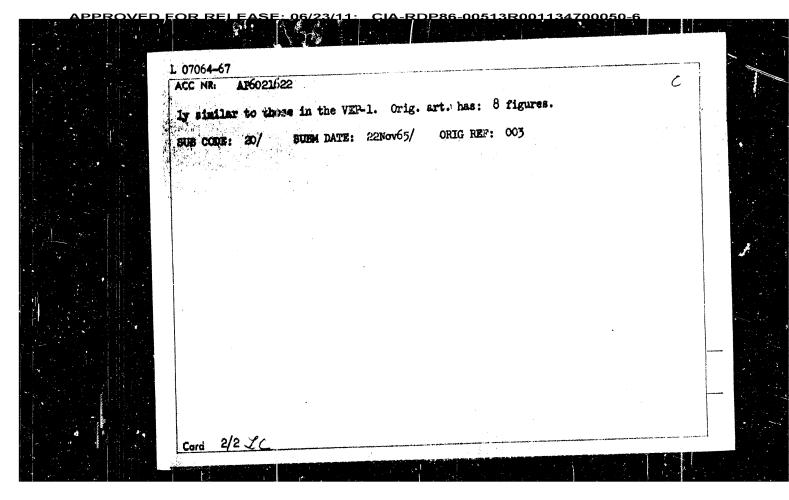
К. USSR/Forestry - Forest Biology and Typology. Ref Zhur - Biol., No 4, 1958, 15349 Abs Jour V.G. Mishnev Author The Forestry Institute of the Academy of Sciences, Inst Bielorussian SSR. : A Quantitative Evaluation of Renewal under the Tree Title Canopy of the Spruce-Hornbeam-Oak Woods in the Bielorussian SSR. (Kolichestvennaya otsenka vozobnovleniya pod pologom yelovo-grabovykh dubrav BSSR). : Sb. nauchm. rabot po lesn. kh-vu, In-t lesa, AN BSSR, 1956, vyp. 7, 147-154 Orig Pub : Renewal was studied in 1951-1953 in the spruce-horn-Abstract beam-goutweed oak woods, the most distributed and most productive type of oak grove in the central portion of Card 1/3





L. 05821-67 ACC NR. AT6031468 It has electron-optic channels and a converter to transform an electron beam into a positron beam. It now works at an energy of 200 Mev. Basic studies of the process of insertion into the storage ring were made at an energy of 100 Mev. A detailed description is given of the installation and storage of electrons and positrons. A system of spark chambers, comprising a 2 x 0.7 solid angle steradian close to the vertical direction, was prepared for experiments on the interaction of positrons and electrons. Efforts are now being made to increase the accumulation speed of positrons. Orig. art. has: 4 figures. SUB CODE: 20/ SUBM DATE: none/ ORIG REF: 006/ OTH REF: 601/





L 07064-67 EWT(m) IJP(c) AP6021622 (N)SOURCE CODE: UR/0089/66/020/003/0213/0.217. AUTHOR: Auslender, V. L.; Kulipanov, G. N.; Mishnev, S. I.; Naumov, A. A.; Popov, S. G.; Skrinskiy, A. N.; Tumaykin, G. M. TITLE: Experimental data on the interaction of beams during collision 36 SOURCE: Atomnave, energiya, v. 20, no. 3, 1966, 213-217

TOPIC TAGS: Relectron collision, storage ring, positron/ VEP-1 storage ring, VEPP-2 ABSTRACT: The authors present a preliminary review of results of beam collision effects, obtained with the VEP-1 (electron-electron) storage ring and the VEPP-2 (positron-electron) storage ring. The installations and the main parameters of the beams in the storage rings are presented elsewhere (Atomnaya energiya, v. 19, 498 ani 502, 1965; E. I. Zinin et al., present source, p. 220 [Acc. Nr. AP6021624]). Most of the data pertain to the VEP-1 storage ring at colliding beam energies of 43 Mev. The data presented include the diagram of resonances in the working region of the magnetic field, photographs of different spreading effects in the beams, the distribution of the densities of the particles in one beam with and without the collisions with the other beam, the dependence of the electron lifetime on the revolution frequency and on the colliding-beam current, and the dependence of the partial electron lifetime on various factors. The phenomena in the VEPP-2 storage ring were essential-Card UDC: 621.384.612.4

SOURCE CODE: UR/0089/66/020/003/0217/0220 07055-67 EWT(1) (N) · AP6021623 5 AUTHOR: Derbenev, Ya. S.; Mishnev, S. I.; Skrinskiy, A. N. TITLE: Effects of electromagnetic interaction of particles with a colliding plasmoid SOURCE: Atomnaya energiya, v. 20, no. 3, 1966, 217-220 TOPIC TAGS: plasmoid acceleration, betatron accelerator, synchrotron, storage ring, plasma electron oscillation ABSTRACT: The authors investigate the influence of the electromagnetic field of the colliding plasmoid on the betatron oscillations of particles of a small plasmoid. The differential equations are written out for the one-dimensional oscillations of a particle periodically acted upon by a colliding plasmoid of given configuration, and the effect of various initial conditions is discussed. Special attention is paid to effects due to nonlinearity of the transverse component of the field of the colliding plasmoid. The conditions under which resonances appear are derived and effects corresponding to given resonances are approximately evaluated. The influence of parasitic equilibrium orbits is taken into account. Ins ability due to the action of the plasmoids on the synchrotron oscillations is shown to be important for electronelectron systems but not for electron-positron systems. Orig. art. has: 3 figures and 13 formulas. ORIG REF: 004 SUBM DATE: 22Nov65/ SUB CODE: 20/ UDC: 621.384.612.4 1/1 Card

